

PROCEEDINGS OF THE PRE-BID CONFERENCE FOR THE PROCUREMENT OF LASER PROJECTORS FOR COMPOSITE PLY LAYUP.

DATE & TIME : 25-09-2018 @ 10.00 AM

VENUE : ACD CONFERENCE HALL.

The Pre-bid Conference was held and the following T&PC members attended the meeting: -

Sl. No.	Name & Designation		Role
1	Mr. T. C. Subba Reddy	Scientist - G, ADA	Chairman
2	Mr. P. Ravi Kumar	Sr. Scientist, ACD	Member
3	Mr. N. Lakshmi Narasimha	Chief Manager, ACD, HAL	Expert Invitee
4	Dr. D. Saji	Sr. Principal Scientist, ACD	Member
5	Mr. N. Paranthaman	Technical Assistant, ACD	Member- Convenor (TSC)
6	Mr. Annadurai . M	FAO	Member
7	Mr. M.J. Nandeesh	SPO	Member - Convenor (T&PC)

The list of Prospective bidders who attended the Pre-bid Conference is as per **Annexure-I**.

At the outset, the Indentor/Chairman welcomed all the Members and the representatives of the Bidders and briefed in general the scope of the Project and thereafter requested **SPO** to brief the Bidders on the salient features of the Commercial terms and the Indenting Officer to read out the clarification sought by the Prospective Bidders and the replied thereto as detailed in **Annexure-II (Part A: Technical Clarification and Part B: Commercial Clarification, if any)**.

The Prospective Bidders were informed to submit the documents as specified in Tender Clause No.1.9.1 w.r.t Clause 1.9.3 as part of their bid on CPPP Website <http://etenders.gov.in>.

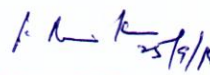
The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of CPPP Portal and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before formulating and submitting their bids as stipulated in bidding Documents.

The meeting ended with a vote of thanks to the Chair.


Encl: as above.


M.J. Nandeesh
SPO



Annadurai . M
FAO


P. Ravi Kumar
Member


N. Lakshmi Narasimha
Member


Dr. Saji
Member


N. Paranthaman
Member


T C Subba Reddy
Chairman



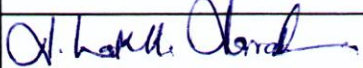




**CSIR-NATIONAL AEROSPACE LABORATORIES
BENGALURU - 560 017**

TENDER NO.: NAL/PUR/ACD/126/18-Z
DATE & TIME : 25-09-2018 @ 10.00 AM
VENUE : ACD Conference Hall

ANNEXURE - I

Pre-Bid Conference towards Procurement of Laser Projectors for Composite Ply Layup

ATTENDANCE SHEET - T&PC MEMBERS

Sr. No.	Name		Signature
1	Mr. T. C. Subba Reddy, Scientist - G, ADA	Chairman	
2	Mr. P. Ravi Kumar, Sr. Scientist, ACD	Member	
3	Mr. N. Lakshmi Narasimha, Chief Manager, ACD, HAL	Member	
4	Dr. D. Saji, Sr. Principal Scientist, ACD	Member	
5	Mr. N. Paranthaman, Technical Assistant, ACD	Member- Convenor -TSC	
6	Mr Annadurai, FAO	Member	
7	Mr. M.J. Nandeesh, SPO	Member- Convenor T&PC	



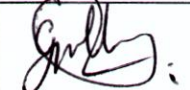
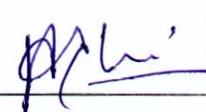

NATIONAL AEROSPACE LABORATORIES
BENGALURU - 560 017

TENDER NO: NAL/PUR/ACD/126/18-Z
DATE & TIME : 25-09-2018 @ 10.00 AM
VENUE : ACD Conference Hall

ANNEXURE - I

Pre-Bid Conference towards Procurement of Laser Projectors for Composite Ply Layup

ATTENDANCE SHEET - PROSPECTIVE BIDDERS

Sr. No.	Name of the Firm	Name & Designation of Representative	Mobile No. & Email ID	Signature
1	LAP LASER/ HYPERCOS ENTERPRISES	SURESH UNNITHAN SALES MANAGER	9886318916 SURESHHPCC@GMAIL.COM	
2	VIRTEK / IIGMA. Pvt. Ltd.	ESHWAR RAO REGIONAL PRODUCT MANAGER	9900884231. Cshwar@iigma.in	
3	VIRTEK / IIGMA Pvt Ltd.	Gopel Krishna Kanath - Sales Engineer -	8792284320. Email-gopelk.kanath@iigma.in	
4	Micronel Global Engineers.	Balaji.R. APPLICATION ENGINEER	8951197145 P6@micronel.net	B Balaji.
5	ASHWANI KUMAR Sr. Manager.	MICRONEL Global Engineers Pvt	9986973777 P3@micronel.net	
6	LOHITH RAMESH ACCOUNT MANAGER	→ FARO BUSINESS TECHNOLOGY	9880343130 Lohithramesh@faro.com	
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CSIR-NATIONAL AEROSPACE LABORATORIES BENGALURU

Tender No. : NAL/PUR/ACD/126/18-Z

Item Description : Procurement of Laser Projectors for Composite Ply Layup

Sr. No.	Tender Clause	Query / Clarification Sought	Clarification/Amendment
1.	4.1.1.h	The Dimensions of the projector specified here is not applicable to all vendors	Projector dimension is updated with the consent of all vendors present in meeting
2.	4.1.2.2	Green Laser Wavelength is ranging from 520 to 532nm only. Hence the 635nm wavelength specifications stands unnecessary	In Technical specification the range of green laser is updated to 520 to 532nm only.
3.	4.1.2.4	The laser class specified calls for 2M / 3A only. Can we supply a better class of laser	Yes the point is updated as follows: Class: 2M / 3A or better
4.	4.1.2.8	Onsite replaceable green laser is applicable only to one vendor	Technical specifications revised to include replacement at the OEM premises, but free of cost
5.	4.3.4.3	Acceptance Test at NAL	The Drawings of Tool -1 & Tool - 2 are attached as annexure -1 & Annexure-2 respectively for vendors reference
6.	4.9.9	Clarity needed on supply of software for import of Catia format files	The specifications are updated accordingly
7.	4.9.11	Target tools adaptor diameter requirements to suit the existing tools of NAL	This point is updated by adding the adaptor diameter in the specs
8	4.9.12	Target tool repair kit is neither applicable nor mandatory for all vendors	This item is re-classified as an optional item to enable the vendors to quote as per their target configurations
9	4.9.14	4.9.14 & 4.9.19 are one and the same for every vendor as the item 4.9.19 itself is sufficient to perform calibration & certification of laser projector	With the consent of all the vendors present, the item in clause 4.9.14 is deleted and as a result the clause 4.9 will have total of 19 items only
10	4.9.19	The certification/ calibration fixture does not require 36 repairable targets hence existing specification to supply of 36 targets is to be revised to minimum quantity	The specifications are updated for supply of minimum number of 4 targets for the efficient working of Calibration plate / certification fixture



Indenter



Project Leader

**CSIR-NATIONAL AEROSPACE LABORATORIES
BENGALURU**

COMMERCIAL QUERIES & CLARIFICATION

Tender No. : NAL/PUR/ACD/126/18-Z

Item Description : Procurement of Laser Projectors for Composite Ply Layup

Sr. No.	Query / Clarification Sought	Clarification/Amendment
—— NIL ——		

Sd/-

CHAPTER 4 (REVISED)

SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

4.1 Detailed Specification

Preamble: - The use of laser projectors makes mechanical templates or time-consuming measurement procedures obsolete. The data file for projection is generated from the CAD data used for product design. The outlines of the different layers are shown on the tool surface. Large areas are covered by connecting the required number of projectors. ACD would like to acquire a Laser Projector to reduce manufacturing time of LCA Composite parts and its assembly.

Typically, laser projection systems demonstrate how laser projection technology can offer more control over the composites processing. A typical laser projector consists of the following parts like Laser Projector, Software for processing input data, Distribution Box, remote, targets etc.,

Scope: Supply, installation, commissioning, testing & Calibration of Laser Projection System and Training on the parts. The clean room ceiling height is 5 meter (approx.) in which the projectors are to be installed. The vendor, if required, may visit the site. The vendor should provide the Schematic diagram/drawing for installation & commissioning in the technical bid and to clearly indicate NAL scope of work. The Laser projection system shall be tested at NAL site after installation & commissioning to meet the specification requirements.

The details of technical specifications for a Laser projection system are listed below:

4.1.1. Laser Projection:

- a) Projection Angle/ Field of view (FoV): 60°(std) to Maximum 80°
- b) Projection Accuracy & Repeatability: +/- 0.5 mm Max. @ 4 m height & area of projection 5m x 5m.
- c) Target Tool: Minimum 12 number each of 0° & 45° target tools to be provided to calibrate the Mould.
- d) Remote operation (@20 feet min.): To control the projection system like Calibration mode, Show / increment of different layers/ Line width, etc. to facilitate layup
- e) Calibration / re-calibration of Mould: Manual & automatic tracking of targets
- f) Use of multiple projectors at a distance of 3m max for projection on deep contoured tool / doubly curved surfaces.
- g) Projector weight shall be less than 25 kgs.
- h) Projector Dimensions: Maximum Length : 600 mm, Maximum Width : 400 mm and Maximum height : 250 mm



- i) Vendor shall ensure Improved thermal control which helps the projector maintain a cooler and more consistent temperature, reducing the stress on its parts and thus contributing to a longer operational life.
- j) Hardware cooling: Thermally cooled channels
- k) Design: System should be Robust in design, rodent proof & capable to use in industrial environment.
- l) Alignment:
 - 1. Software should allow operator to align a tool in Automatic alignment (search for targets in the area it last found)
 - 2. Manual mouse (select targets using crosshair controlled by a mouse, trackball, or IR/RF remote).
 - 3. Tracking mode (select targets by moving a laser ring with a retro-reflective pad).
- m) Rechecking the tool movement: Laser should periodically check a target location to determine whether the tool or projector has moved. If the system finds that a position has changed, the system should automatically rescan the tool and project correctly again.
- n) Projection: The system should be capable of capturing simple points in 2D and 3D points using either with single projector or combination of two projectors.

4.1.2. **Laser:**

- 1. Type: Green (Solid state)
- 2. Wavelength: 520 to 532nm
- 3. Laser Power: Max. power 5mW
- 4. Class: 2M / 3A or better
- 5. Laser Line width: ranging from min 0.6mm to max 1.2mm at 4m height
- 6. Laser beam projection on the Mould should be stable without flickering on single Mould.
- 7. The system should conform to applicable health and safety requirements and shall be Eye-Safe as per US/ European/ Indian standards as applicable.
- 8. Laser replacement: On Site Replaceable green laser or replacement at OEM by providing the calibrated stand by unit with free of cost

4.1.3. **Data Transfer:**

- 1. Distribution Box to connect two or more Projectors
- 2. Cable length: 25m for each projector
- 3. Terminal connectors to connect with the distribution box & projectors

4.1.4. **Software Features**

- 1. Import of CAD files such as CATIA V5, UG, IGES & STEP (all latest CAD related Software's) formats, to convert into laser projection files



2. The system should poses backward compatibility. (i.e. PLY, CAL & CFG files used with previous version of software should continue to work in latest release software also.
3. Import of calibration data as CAD file or by manual input for alignment of Mould/ tool with 2D/ 3D CAD data
4. Provision for authentication after each layer by authorized person only
5. Export of layer no, orientation, Component Name, Part No., Part Sl. No as a report for traceability
6. Export of multiple calibration data for each Mould separately after completion of layup as a report for traceability.
7. Manual & automatic calibration using targets
8. Capability of client server networking setup.
9. Software should have provision to work as administrator, supervisor operator levels with adequate security.
10. Software should support for multiple projections for multiple groups working on different tools/ Moulds
11. Record of actual projection hour of projector
12. Comprehensive log function to track all user actions
13. Software should be able to work in read only mode with respect to original CAD data.
14. Backup Software in a media shall be provided for all the software incorporated in Laser projection system.

4.1.5. Installation & Training:

1. The vendor should supply, install & commission the Laser projection system at NAL- ACD
2. To provide on the job training on both Hardware & Software for NAL team at our site for five working days on different tools

4.1.6. Desktop/ Industrial PC for Laser Projection System

A branded Desktop like HP, DELL etc., with following minimum configurations should be supplied for the use of laser projection system

1. Windows 10 OS or better
2. Intel Core-i7 Processor (5th Generation or above)
3. Intel Original Mother board
4. 8GB DDR 4 RAM (2400 MHz or above)
5. 1 TB Hard disk or better
6. DVD writer/ reader
7. 24" LED Monitor
8. Standard trackball 3 button mouse
9. Should have enough Ethernet/LAN Port to connect with Internet & for data transfer to laser projectors.
10. Keyboard & Mouse combo & any other accessories which are necessary for laser projection.



4.1.7 Calibration plate:

1. The vendor should supply a standard tool or calibration plate (with standard shapes such as circle, diamond & square) for periodical & need based assessment of the Projection system.
2. Vendor to quote calibration plate/fixture separately, also the vendor should provide the procedure for calibration to calibrate Laser Projection machine.

4.2 Scope of Supply

Scope of Supply includes the following:

- (i) Supply of the equipment / system as specified in Clause 4.1 above
- (ii) Pre-Dispatch Inspection as specified under Clause No.4.4
- (iii) Installation & Commissioning as specified under Clause No.4.3.3
- (iv) Training as specified under Clause No.4.5
- (v) On site comprehensive Warranty as specified under Clause No.4.6

4.3 Inspection & Tests

4.3.1 General

- (i) The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here. The Supplier shall at its own expense and at no cost to the NAL carry out all such tests and/or inspections of the Goods and Related Services as are specified in the chapter 4 or as discussed and agreed to during the course of finalization of contract.
- (ii) The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the NAL
- (iii) Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- (iv) The NAL or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the NAL and what inspections and tests the NAL requires and where they are to be conducted. The NAL shall notify the Supplier in writing



in a timely manner of the identity of any representatives retained for these purposes.

- (v) Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- (vi) The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- (vii) The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- (viii) With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their Principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
- (ix) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- (x) The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
- (xi) Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
- (xii) On successful completion of acceptability test, receipt of deliverables, etc and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment. Acceptance certificate form as given in Annexure-I (Chapter 8) should be signed by authorised representative of Supplier & Purchaser.



- (xiii) Installation demonstration is to be arranged by the supplier and the same is to be done within 15 days of the arrival of the equipment at site.

4.3.2 Manufacturer's Inspection Certificate

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such Pre-dispatch inspection and testing.

4.3.3 Installation, Commissioning & Acceptance Test

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

4.3.4 Acceptance Test at NAL:

1. Bid evaluation is based on successful demo at CSIR-NAL premises
2. The vendor should prove the projection accuracy and repeatability of the laser beam.
3. Projection system has to be demonstrated on Moulds as per the NAL CAD data of Tool -1 (Dwg.No: NAL/ACD/DWG/001) & Tool - 2 (Dwg No NAL/ACD/DWG/002) to demonstrate all the listed software features.
4. The Suppliers needs to demonstrate and prove the Laser projections of ply geometries on the above tools & on Calibration plate / fixture.
5. The programs duly approved on system are to be used and proven on the supplied system.



6. Acceptance of the Laser Projection System is based on the verification of the ply projections on the above mentioned with respect to customer requirements to be coordinated by Quality Assurance of NAL.
7. Final system qualification is performed on the parts at the time of installation with reference to data supplied by NAL.

4.4 Pre-Dispatch Inspection & Training at Manufacturer's Facility

1)	Location		OEM premises
2)	Number of persons		2
3)	Period of Inspection		3 days
4)	Nature of Inspection		Demonstration of laser projector features on tools and troubleshooting methods
5)	Period of Training		3 days
6)	Nature of Training		Training of software capabilities and equipment operations

4.5 Training at CSIR-NAL

1)	Location		At ACD, CSIR- NAL Bangalore
2)	Number of persons		05
3)	Period of Training		05 days from the date of installation / commissioning
4)	Nature of Training		Hands on training in Software & hardware management for laser projection

4.6 Incidental Services

(i) On site Comprehensive Warranty:

- **1 Year** from Installation & Commissioning and date of acceptance
- Down-time call attendance should be within 48 hrs
- In case the Equipment / System remains non-operational for more than 7 days then warranty period will be extended for the equivalent period for which Equipment / System remained non-operational. Warranty extension in such case shall be done without prejudice to any other Term & condition of the contract
 - Free software upgradation support during warranty period
 - Minimum of 7 years of spare & service support after warranty on call / need basis with nominal charges.

(ii) Comprehensive AMC charges for after warranty period for 3 years should to be quoted separately



4.7 Delivery Schedule (including supply, installation, commissioning, training & acceptance)

Delivery of the Item		Installation, Commissioning & Training		Acceptance of the item
Days/ Weeks/Months	Location	Days from the date of receipt of equipment	Location	Days from the date of Installation, Commissioning & Training
8 Weeks	Central Stores of CSIR-NAL, Bangalore	10 days	At the Clean Room of Advanced Composite Division of CSIR- NAL, Bangalore	10 days

4.8. General Terms & Conditions:

1. Laser enclosure rating as per internationally accepted norms
2. Available Power Supply at NAL is 230V AC, 50HZ, Single Phase
3. The projector and associated software & hardware must cater for later augmentation with additional laser projectors.
4. Provision in software for optimum usage of projectors when multiple projectors are in use
5. Vendor should provide hard and soft copies of operating manuals of the laser projector system in English.
6. Copy of installation software and related drivers should be provided in CD/DVD.
7. During hardware crash or Operating system (OS) change or reinstallation the CAD data and the computer system should be back in the working condition.
8. The supplier should install and commission at our facility. The approx. dimensions of the room are 13m (L) x 14m (W) x 4.2m (H) (floor to roof).
9. During & after the warranty period, the technical support has to be provided within three days in case of any breakdown.
10. Supplier should also provide details about the routine or periodical maintenance of Laser Head and Laser projection system including the life in terms of usage hours.
11. Repair / maintenance of the hardware should be done preferably at the installed site or within India. If the system has to be sent outside India for any

maintenance / repair, then vendor should arrange a replacement unit before shipping at his cost.

12. The projector should not be heavy and approximately 25Kg or less
13. the laser projector's operating temperature are up to max 40°C & Relative Humidity max 80%.
14. Laser replacement: onsite replacement of green Laser with low cost of maintenance
15. Two sets of operating manual should be supplied in English language only covering all relevant procedures to safely operate the system and sequence of steps to perform full potential operations as the system is designed. Vendor has to provide the technical information point-by-point as mentioned in technical specification document. English Language PDF format on CD (Operator guide, system administration guide, periodic maintenance, etc.,). Also the vendor should provide the line diagram of connections from Computer system to Laser Projector.
16. Onsite Training should include the following:
 - a) Comprehensive information about Laser Projection System operation, safety set up & calibration.
 - b) Instruction on software including both administrator & Operator section of the program.
 - c) General laser safety and laser projection set-up details.
 - d) Trouble shooting, calibration check out and verify the laser projection system.
 - e) Training syllabus (In English language only) to be provided prior to installation / at the time of installation.
 - f) Refresher Training on Laser Projection System to be provided.
 - g) Certificate: After training, the Training certificate should be issued individually to the trained personnel.
 - h) Ethernet package which include the following:
 - Switch 8 ports – 1 No.
 - Router 4 port Cable E projectors – 1 No.
 - Power Adaptor –2 Nos.
 - i) Ethernet projector LED package:
 - Ethernet card for PC 1 No.
 - Alpha display international 1 No.
 - Ethernet cable for LED 2 Nos.
 - Adaptor 1 No.
17. Vendor should inspect the items received as per Purchase Order at the NAL site before installation & commissioning. After Inspection, the individual components need to be assembled, installed and tested to verify proper working of the system.



4.9. List of Deliverables:

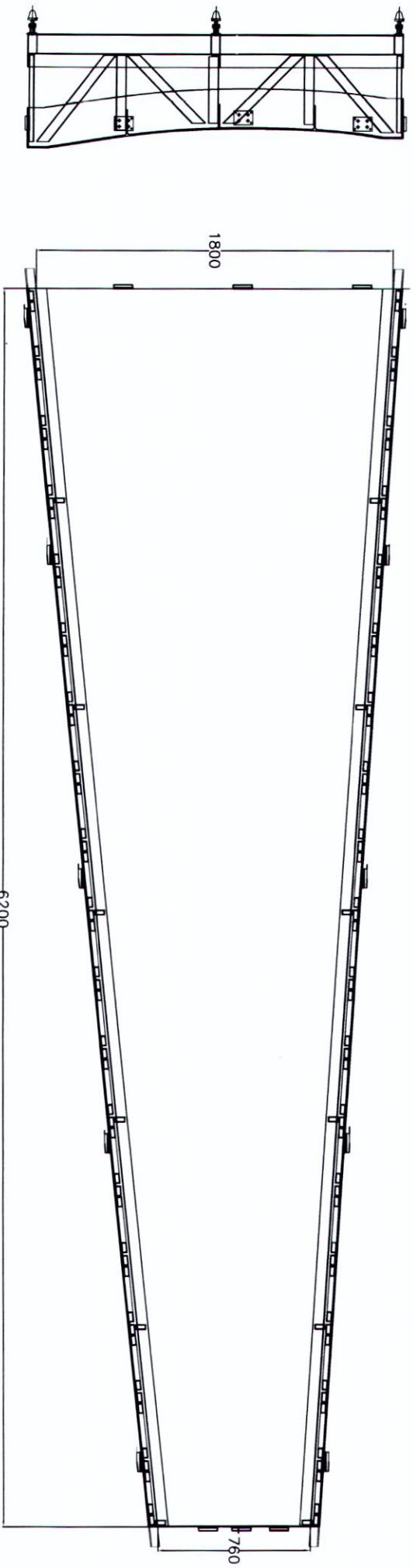
Sl. No	Item Description	Quantity to be Supplied	Remarks
1	Laser Projector	02 Nos	
2	Mounting brackets for Laser projectors	02 Nos	
3	Industrial PC As per Specification in SI No 6	01 No	
4	Projector remote	02 Nos	
5	Projector Cable for Data transfer of 25m each	02 Nos	
6	Connector terminals for the Cable	06 Nos	
7	LAN cable to connect PC & distribution box (3m min)	01 No	
8	Distribution box (If Necessary)	01 No	
9	Laser projection Software with perpetual license for import of CAD Data as in Sl. No 1 & 2 of Chapter 4.1.4(in CD/DVD)	01 No	
10	Laser Projection Software as required for Projection of Layers on tool(in CD/DVD)	01 No	
11	Target tools 0° & 45° (with 6 mm dia adaptors)	Each 12 Nos	
12	Target repair tool kit (if necessary) (optional)	01 set	
13	Target stickers (with 25 Nos in each sheet)	04 sheets	
14	User manual & Maintenance guide in English	02 sets	
15	On job training in Handling of Hard ware & Software at NAL Premises	03 days (Min)	
16	Certificate of Laser enclosure rating asper internationally accepted norms	01 No	
17	Certificate of warranty on hardware & software on delivery	01 No	
18	Certification fixture complete with minimum of 4 targets, inspection data disc containing files for target locations and projection files for circle / diamonds / scribe lines and shipping / storage container		
19	Technical Evaluation Criteria Vendor need to provide the compliance statement against each point of the specification as mentioned above. Optional items are not the part of bid evaluation.		


Indenter


Project Leader

TOOL-1
DWG No: NAL/ACD/DWG/001

Annexure -1

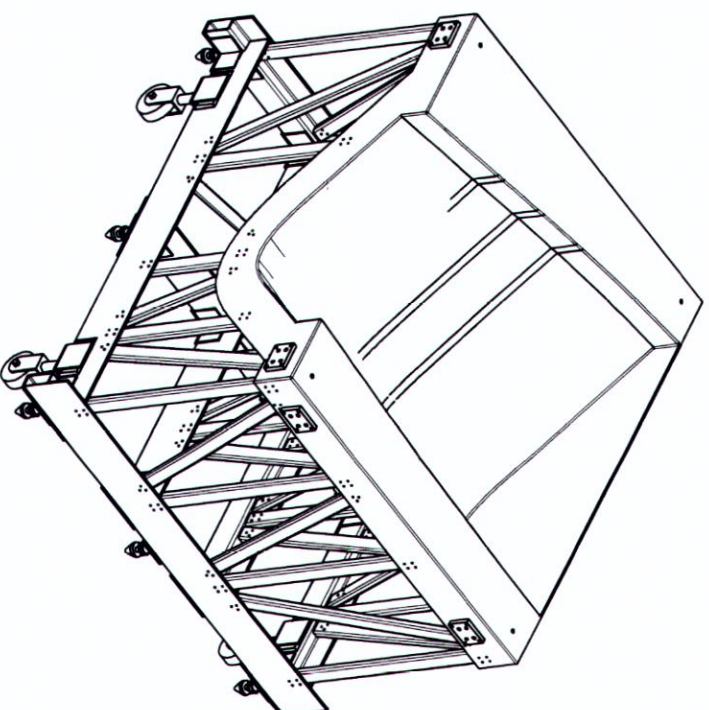
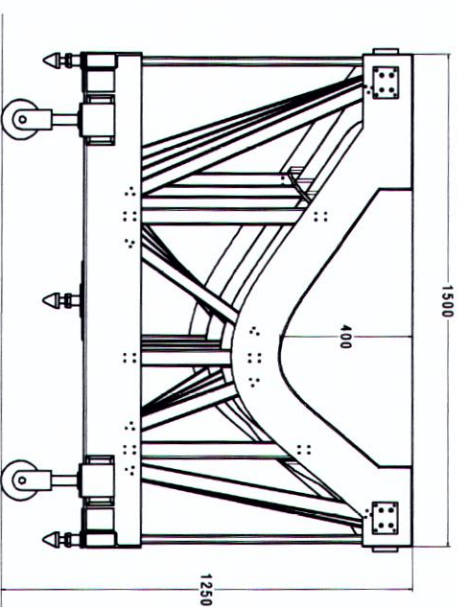
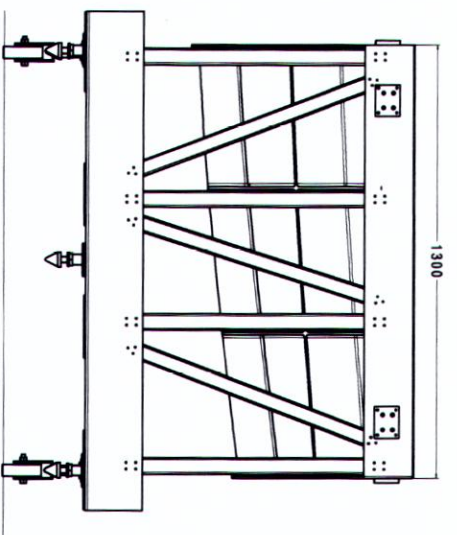


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Tool-002

DWG No: NAL/ACD/DWG/002



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